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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PETTITT, JOHN F	
ART UNIT	PAPER NUMBER
3744	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,064	SAR ET AL.	
	Examiner	Art Unit	
	John Pettitt	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 11/16/2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 8,20 and 29 is/are allowed.

6)☒ Claim(s) 1-7, 9-19, 21-28, 29 is/are rejected.

7)☒ Claim(s) 27 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on 16 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-6, 11, 13-19, 23-25, and 28 have been fully considered but they are not persuasive.

In response to applicant's argument that the cryopumps cited do not "freeze the gas" and only condense or liquefy the gas to create the high vacuum, it should be noted that the cryopumps are entirely capable of freezing the gas in light of the refrigerants used and temperatures of the cooling elements, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that the term "condense" would not suggest solidification. In the field of cryogenics, cryocondensation - sometimes shortened to simply condensing - is "the pumping of gas due to a phase change of the gas into a solid or a liquid" (p.255, Capture Pumping Technology, 2nd Fully revised Edition, Kimo M. Welch, Elsevier, 2001).

Applicant's argument with respect to the interpretation of column 7, lines 1-6 of Lessard is not convincing as such an interpretation would mean that the vacuum created by the device would never be lowered below 8 torr which is certainly not true as cryopumps are used to create low vacuums (~1x10^{-8} Torr).

Additionally, applicant's arguments are moot in view of the new ground(s) of rejection.

The indicated allowability of claims 12 and 24 is withdrawn in view of the newly discovered reference(s) to Seelandt (US 3,177,672). Rejections based on the newly cited reference(s) follow.

The indicated allowability of claims 7 and 9-10 is withdrawn. Rejections based on the newly cited reference(s) follow.

The indicated allowability of claim 26 is withdrawn in view of the amendments entered by the applicant and newly discovered reference of Kliphuis (US 3,582,805).

As such this office action is being made non-final to afford the applicant the opportunity to respond to the new grounds of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Krause (US 3,626,046).

In regard to claim 1, Krause teaches method comprising evacuating a chamber (vacuum chamber 10) having a substantially pure gas therein (hydrogen, column 2, lines 70-71); freezing residual gas in the chamber to generate a high-level vacuum

within the chamber (column 3, lines 45-50), wherein the chamber has essentially no other gases therein other than the substantially-pure gas.

In regard to claim 2, Krause teaches evacuating comprises evacuating the chamber to a medium level vacuum (column 3, lines 45-50).

In regard to claim 3, Krause teaches that the chamber is filled with the gas (column 2, line 71).

In regard to claim 5, Krause teaches repeating the filling and evacuating (column 4, lines 8-11).

Claims 1-2, 11-17, and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Seelandt (US 3,177,672).

In regard to claim 1, Seelandt teaches a method of generating a high level vacuum comprising: evacuating a chamber (column 1, line 58; interior of sphere) having a substantially pure gas therein (air); and freezing residual gas in the chamber to generate a high level vacuum within the chamber (column 2, lines 15-20; column 2, line 28).

In regard to claim 2, Seelandt teaches that the evacuating comprises evacuating the chamber to a medium-level vacuum (column 4, line 21).

In regard to claim 11, Seelandt teaches that the high-level vacuum is between approximately $1x10^{-5}$ Torr and $1x10^{-8}$ Torr (column 2, line 28; column 5, line 34).

In regard to claim 12, Seelandt teaches a method of generating a high-level vacuum comprising: evacuating a chamber (column 1, line 58; interior of sphere) having

a substantially-pure gas therein (air); and freezing residual gas in the chamber to generate a high-level vacuum with the chamber (column 2, lines 15-20; column 2, line 28), wherein the gas comprises substantially-pure water vapor having an impurity level of less than approximately 100 PPM. (atmospheric air comprises *pure* water vapor, and therefore it has an impurity level of less than approximately 100 PPM)

In regard to claim 13, Seelandt teaches a chamber (interior of sphere) having a substantially pure gas (air) therein at less than atmospheric pressure (column 4, line 21); a cooling element (cryoplate, column 2, lines 15-20) capable of freezing residual gas in the chamber to generate a high-level vacuum within the chamber, wherein the chamber has essentially no other gases therein other than the substantially pure gas (atmospheric air).

In regard to claim 14, Seelandt teaches a medium vacuum pump (roughing pump; column 4, line 15) which reduces the pressure in the chamber to a medium vacuum (column 4, line 21) before operating the cryopump which is capable of freezing the gas.

In regard to claim 15, Seelandt teaches that the medium level vacuum ranges between approximately $1x10^{-2}$ Torr and $5x10^{-2}$ Torr (column 4, line 21).

In regard to claims 16-17, Seelandt teaches the use of valves operable to allow the gas into the chamber, and operable to allow the medium-level vacuum pump to evacuate the chamber to the medium-level vacuum (column 4, line 17). The valving discussed would inherently be capable of repeatable operation. In other words, the

valves can be open and shut repeatedly to allow repeated introduction of air into the chamber and repeated evacuation of the air.

In regard to claim 23, see claim 11 above.

In regard to claim 24, Seelandt teaches a chamber having a substantially pure gas therein (air) at less than atmospheric pressure, a cooling element (cryoplate, column 2, lines 15-20) capable of freezing residual gas in the chamber to generate a high-level vacuum within the chamber, wherein the chamber has essentially no other gases therein other than the substantially pure gas (atmospheric air), and wherein the substantially pure gas comprises substantially pure water vapor having an impurity level of less than 100 PPM (atmospheric air comprises *pure* water vapor, and therefore it has an impurity level of less than approximately 100 PPM)

In regard to claim 25, Seelandt teaches that the cooling element (cold plate) is coupled to a cryogenic cooler (column 3, lines 30-40; the cooling liquid and porting system constitutes a cryogenic cooler) to cool the cooling element (cold plate) and dissipate heat.

Claims 1-7, 13-14, 16-19, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Lessard et al. (US 5,862,671).

In regard to claim 1, Lessard et al. ('671) teach a method of generating a high-level vacuum within a chamber comprising the steps of evacuating the chamber (20) having substantially-pure gas therein (column 2, lines 5-11, the substantially pure gas is Nitrogen). Freezing residual gas (as the term condense in the field of cryopumping is

known to be broadly understood to mean the process of pumping gas via a phase change of the gas into a solid or a liquid) in the chamber to generate a high-level vacuum within the chamber (column 1, lines 23-32).

In regard to claim 2, Lessard et al. ('671) teach that the evacuating comprises evacuating the chamber to a medium level vacuum (column 4, lines 38-42, 58-60). For the applicant's information, a micron in this context refers to a micrometer of Hg (or 0.001 mm of Hg) is equal to $1x10^{-3}$ Torr.

In regard to claim 3, Lessard et al. ('671) teach the step of purging impurities from the chamber (20) with the gas (nitrogen) by filling the chamber with the gas (column 1, line 64 - column 2, line 4 and column 4, lines 20-23).

In regard to claim 4, Lessard et al. teach ('671) the step of slightly pressurizing the chamber with the gas (column 4, lines 8-13). Note that the comment (column 7, paragraph 1) about ensuring no freezing of any species in the chamber is only germane to the purge process and certainly does not contradict freezing during normal cryopumping operation in which high vacuums are created.

In regard to claim 5, Lessard et al. ('671) teach the steps of repeating the filling of the chamber with the gas and the evacuating of the chamber several times to remove impurities from the chamber (column 4, lines 50-57).

In regard to claim 6, Lessard et al. ('671) teach the step of evacuating the chamber (prior to freezing - cryopumping) to generate a medium level vacuum (column 4, lines 36-42).

In regard to claim 7, Lessard et al. ('671) teach evacuating a chamber (20) having a substantially-pure gas therein (column 2, lines 5-11, the substantially pure gas is Nitrogen); freezing residual gas in the chamber to generate a high level vacuum within the chamber (as the term condense in the field of cryopumping is known to be broadly understood to mean the process of pumping gas via a phase change of the gas into a solid or a liquid; column 1, lines 23-32); purging impurities from the chamber with the gas by filling the chamber (20) with the gas (column 1, line 64 - column 2, line 4 and column 4, lines 20-23); repeating the filling and the evacuating to reduce impurities from the chamber and to obtain a high concentration of the gas within the chamber (column 4, lines 50-57); and after filling the chamber with the gas, evacuating the chamber prior to freezing to generate a medium-level vacuum (column 4, lines 38-42, 58-60), wherein the medium-level vacuum ranges between approximately $1x10^{-2}$ Torr and $5x10^{-2}$ Torr (as 0.075 Torr is considered approximately in this range - column 4, lines 38-39).

In regard to claim 13, Lessard et al. ('671) teach a chamber (20) having a substantially pure gas therein at less than atmospheric pressure (column 4, lines 58-60 and column 5, lines 1-5); a cooling element (70 and 62) capable of freezing residual gas in the chamber to generate a high-level vacuum within the chamber, wherein the chamber has essentially no other gases therein other than the substantially pure gas (the chamber contains essentially no other gases other than the nitrogen - column 5, lines 33-50).

In regard to claim 14, Lessard et al. ('671) teach a medium vacuum pump (88) which reduces the pressure in the chamber to a medium vacuum (column 4, lines 36-

42) before operating the cryopump (column 5, lines 1-3) which is capable of freezing the gas.

In regard to claim 16, Lessard et al. ('671) teach a system comprising a valve (80) operable to allow gas into the chamber for purging the chamber with the gas (column 4, lines 14-23) and valve (86) operable to allow the medium level vacuum pump to evacuate the chamber to the medium level vacuum (column 4, lines 36-38).

In regard to claim 17, Lessard et al. ('671) teach that the valves (86, 80) are operable to allow the gas into the chamber for repeatedly purging the chamber with the gas, and operable to repeatedly allow the medium-level vacuum pump to evacuated the chamber to the medium level vacuum (column 4, lines 50--57).

In regard to claim 18, Lessard et al. ('671) teach a system controller (electronic module, column 4, lines 24-28) to operate the valves (86, 80) and the cooling element. The controller's operation of the roughing pump valve (86) is effective for controlling the operation of the vacuum pump (88) relative to the vacuum produced in the chamber (20). Therefore the controller is fully capable of repeatedly purging the chamber with the gas, repeatedly evacuating the chamber to the medium level vacuum, and controlling the cooling to the chamber.

In regard to claim 19, Lessard et al. ('671) teach a gas cylinder (84, and column 2, line 3) having substantially pure gas therein at a higher than atmospheric pressure (60 psig--column 4, line 21). The gas cylinder (84) is capable of at least slightly pressurize the chamber with the gas prior to vacuum pump (88) evacuating the chamber (column 4, line 38-43) and before freezing.

In regard to claim 25, Lessard et al. ('671) teach that the cooling elements (70 and 62) are coupled to a cryogenic cooler to cool the cooling elements and dissipate heat (column 1, lines 33-40 and column 3, lines 33-43).

Claims 13-14, 21, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kliphuis (US 3,582,805).

In regard to claim 13, Kliphuis teaches a chamber (22) having a substantially pure gas therein (air) at less than atmospheric pressure (column 4, line 20); a cooling element (88) capable of freezing residual gas in the chamber to generate a high-level vacuum within the chamber (column 4, lines 16-20), wherein the chamber has essentially no other gases therein other than the substantially pure gas (air).

In regard to claim 14, Kliphuis teaches a medium vacuum pump (column 2, line 73) which reduces the pressure in the chamber to a medium vacuum (capable of being so operated; column 4, line 20) before operating the cryopump (lowering the temperature of the station 88 with the cryogenic refrigerator) which is capable of freezing the gas.

In regard to claim 21, Kliphuis teaches further comprising a magnet (magnets - 81-83 in amplifier - 74) within the chamber, and wherein the cooling element is capable of reducing a temperature within the chamber (at and near station 88) by cooling the magnet to at or below a freezing point of the gas (either nitrogen's or oxygen's) at the medium-level vacuum (15 K is certainly below the freezing point of air's major constituents).

Claims 13 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Longsworth et al. (US 5,687,574).

In regard to claim 13, Longsworth et al. ('574) teach a water vapor cryopump (column 4, lines 35-42) comprising a chamber (14) having a substantially pure gas (air) therein at less than atmospheric pressure (column 2, lines 61-64). The system of Longsworth also comprises a cooling element (44) capable of freezing residual gas in the chamber to generate a high level vacuum (column 5, lines 33-37).

In regard to claim 24, Longsworth et al. ('574) teach that a gas within the chamber comprises pure water vapor (therefore the impurity level is less than 100 PPM).

Claims 13 and 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Lorimer (US 5,855,118).

In regard to claim 13, Lorimer teaches that cryopumps are old in the art (column 1) and that they comprise a chamber (28) having a substantially pure gas (air) therein at less than atmospheric pressure (column 1, line 24); a cooling element (41) capable of freezing residual gas in the chamber to generate a high level vacuum (column 1, line 24; column 1, lines 45-65; the system of Lorimer is fully capable of freezing gas in the chamber due to the temperature at which the cooling element operates).

In regard to claim 23, Lorimer teaches that the high level vacuum ranges between 1×10^{-5} - 1×10^{-8} Torr (1×10^{-8} Torr; column 1, line 24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lessard et al. (US 5,862,671) in view of Muldowney et al. (US 6,257,001).

In regard to claim 15, Lessard et al. ('671) teach a roughing pump which is used to produce a medium vacuum level between 0.075 Torr and 0.100 Torr (column 4, lines 38-39). Though this pressure range is higher than the range claimed by the applicant (0.01 Torr and 0.05 Torr) many cryopumping systems utilize a roughing pump to obtain an initial vacuum of about 1×10^{-3} Torr. This is commonly done because cryopumps operate more efficiently at lower vacuums (less than 1×10^{-2} - 1×10^{-3} Torr, Muldowney et al. ('001) column 1, lines 25-30). Therefore, though Lessard et al. ('671) do not explicitly state that their roughing pump is capable of reaching the medium level vacuum range of the applicant - 0.01 Torr and 0.05 Torr, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to modify Lessard et al. ('671) in view of Muldowney et al ('001) to use a roughing pump capable of reaching a vacuum of 0.01 Torr and 0.05 Torr for the purpose of operating cryopump more efficiently at lower pressures.

Claims 9-10 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lessard et al. (US 5,862,671) in view of Sukenobu (US 4,607,493).

In regard to claim 9, Lessard et al. ('671) teaches evacuating a chamber (20) having a substantially-pure gas therein (column 2, lines 5-11, the substantially pure gas is Nitrogen); freezing residual gas in the chamber to generate a high level vacuum within the chamber (as the term condense in the field of cryopumping is known to be broadly understood to mean the process of pumping gas via a phase change of the gas into a solid or a liquid; column 1, lines 23-32); purging impurities from the chamber with the gas by filling the chamber (20) with the gas (column 1, line 64 - column 2, line 4 and column 4, lines 20-23); repeating the filling and the evacuating to reduce impurities from the chamber and to obtain a high concentration of the gas within the chamber (column 4, lines 50-57); and after filling the chamber with the gas, evacuating the chamber prior to freezing to generate a medium-level vacuum (column 4, lines 38-42, 58-60). Lessard et al. (671) do not teach that the chamber comprises a magnet nor that the magnet is cooled to at or below the freezing point of the gas at the medium-level vacuum.

However, Sukenobu ('493) teaches a superconducting magnet coil (7B) (column 4, line 28) or magnets (14) (column 4, lines 35-40, see also Figure 5) is within the vacuum chamber (1) and in contact with the cooling elements (chevron baffles, 5) for the purpose of preventing β-rays from reaching the cryosorption panel, so that the helium adsorbed on the adsorbent is not adversely desorbed during cryopumping and cryosorption (column 4, lines 15-20, also see column 1, lines 35-68 for a detailed

description of how electron impact desorption reduces the pumping efficiency of cryopumps). Because of the location of the magnet element, the cooling element reduces the temperature within the chamber by cooling the magnet below the freezing point of the gas (nitrogen) within the chamber. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the purging process of Lessard et al. (671) with the crysorption pump of Sukenobu ('493) for the purpose of regenerating the panel (6) of Sukenobu (493).

In regard to claim 10, the combination of Lessard et al. (671) and Sukenobu teaches further cooling the magnet to a cryogenic temperature (4.2 K) after the gas has been frozen. Additionally the vacuum of created in Sukenobu insulates the magnets (Fig. 1-5).

In regard to claim 21, Lessard et al. ('671) teach all of the elements of claim 14 as discussed above, but Lessard et al. ('671) do not teach a magnet within the chamber. Sukenobu ('493) teaches a superconducting magnet coil (7B) (column 4, line 28) or magnets (14) (column 4, lines 35-40, see also Figure 5) is within the vacuum chamber (1) and in contact with the cooling elements (chevron baffles, 5) for the purpose of preventing β-rays from reaching the cryosorption panel, so that the helium adsorbed on the adsorbent is not adversely desorbed (column 4, lines 15-20, also see column 1, lines 35-68 for a detailed description of how electron impact desorption reduces the pumping efficiency of cryopumps). Because of the location of the magnet element, the cooling element reduces the temperature within the chamber by cooling the magnet and is capable of reducing the temperature of the magnet below the

freezing point of the gases within the chamber. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the magnets taught by Sukenobu ('493) with the vacuum system of Lessard et al. ('671) for the purpose taught by Sukenobu ('493), that is, to prevent the helium from being desorbed from the cryopanels to maintain a high vacuum.

In regard to claim 22, Sukenobu ('493) teaches that the magnet is capable of further cooling the magnet after freezing the gas since the temperature of the magnets is so low (column 1, line 15). The high-level vacuum insulates the magnets (14).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliphuis (US 3,582,805) in view of Feinstein et al. (US 3,533,011) hereafter Feinstein. Kliphuis teaches that the magnet is cooled to a superconducting temperature (15 K; a temperature at which superconductivity is possible) to generate a high-level magnetic field for a radar tube in a radar system. (column 1, lines 10-15, column 4, lines 1-20). Kliphuis does not teach that the magnets are electromagnets. However it is well known that electromagnets are obvious variants of permanent magnets and provide flexibility for controlling the magnetic field as taught by Feinstein (column 4, lines 60-68). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the system of Kliphuis by employing electromagnets instead of permanent magnets for the purpose of providing more control over the magnetic field for the radar system.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Longsworth et al. (US 5,687,574) as discussed in relation to claim 13 above and further in view of Bailey (US 5,551,244). The system of Longsworth ('574) comprises a chamber (14) and a cooling liquid (column 8, lines 25-33 and refrigerant mixtures 1, 2, and 3) capable of freezing the substantially pure gas (air) within the chamber. The chamber and cooling system described by Longsworth et al. ('574) is capable of being used to insulate an infared seeker head of a missile. But to further illustrate the capability of the system of Longsworth et al. ('574) for insulating a missile's infared seeker head, consider that Bailey ('244) teaches that such closed cylcle Joule Thomson (JT) systems were commonly known in the art (column 1, lines 24-29) for the purpose of supplying extended periods of refrigeration power. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ the JT system of Longsworth et al. ('574) to cool and insulate the seeker head of a missile, as suggested by Bailey ('244), to provide a longer time period of refrigeration power supply.

Allowable Subject Matter

Claims 8, 20, and 29 are allowed.

Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pettitt whose telephone number is 571-272-0771. The examiner can normally be reached on M-F 8a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JFP III
February 6, 2007

Cheryl J Tyler
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SUPERVISORY PATENT EXAMINER